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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,422	09/26/2003	Kazunari Taki	117246	5750
25944	7590	11/28/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			NGUYEN, NAM V	
			ART UNIT	PAPER NUMBER
			2635	

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/670,422	<b>Applicant(s)</b> TAKI ET AL.	
	<b>Examiner</b> Nam V. Nguyen	<b>Art Unit</b> 2635	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-8 and 21-23 is/are rejected.
- 7) ☒ Claim(s) 2,3 and 9-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/26/03</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

The application of Taki et al. for a “transponder, interrogator and communication system” filed September 26, 2003 has been examined.

This application claims foreign priority based on the application 2002-284939 filed September 30, 2002 in Japan. Receipt is acknowledged of papers submitted under 35 U.S.C 119(a) – (d), which papers have been placed of record in the file.

Claims 1-23 are pending.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-8 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Girard (US# 6,650,695) in view of Wood, Jr. (US# 6,265,963).

Referring to claims 1 and 21-23, Girard discloses a transponder (12) and interrogator (10) for use in a communication system (4) (i.e. a local wireless radio-frequency network) including, in addition to the transponder (12), an interrogator (10) which transmits a carrier wave

Art Unit: 2635

to the transponder (12) so that the transponder (12) receives the carrier wave, modulates the received carrier wave, and returns the modulated carrier wave as a reflected wave to the interrogator (10) (column 1 line 16 to 47; see Figures 1 to 4), the transponder (10) comprising:

a carrier wave receiving and returning device (32) (i.e. an antenna) which receives and returns the carrier wave transmitted from the interrogator (10) (column 1 line 64 to column 2 line 46; see Figures 1 and 2); and

a carrier wave modulator (28) (i.e. RF modulator) which modulates, based on the subcarrier wave modified by the frequency hopping device (40) (i.e. processor), the carrier wave received by the carrier wave receiving and returning device (32), so that the carrier wave receiving and returning device returns the modulated carrier wave as the reflected wave to the interrogator (10) (column 2 line 55 to column 3 line 64; column 4 lines 33 to 48; see Figures 2 to 4).

However, Girard did not explicitly disclose a frequency hopping device which hops a frequency of a subcarrier wave according to a frequency hopping pattern representing a unit data as a first portion of an information signal, and thereby modifies the subcarrier wave.

In the same field of endeavor of processing wireless radio frequency communication device, Wood, Jr. teaches that a frequency hopping device (16) (i.e. an integrated circuit) which hops a frequency of a subcarrier wave according to a frequency hopping pattern representing a unit data as a first portion of an information signal, and thereby modifies the subcarrier wave (column 8 line 45 to column 9 line 12; see Figures 4 to 6) in order to reduced amount of time the interrogator continuously uses a single frequency.

One of ordinary skilled in the art recognizes the need to use a frequency hopping circuitry in a RF device of Wood, Jr. in wireless digital data transmission of a passive transceiver of Girard because Girard suggests it is desired to hop between a pseudo-random succession of frequencies in a predetermined frequency range in a transponder (column 4 lines 25 to 48) and Wood, Jr. teaches that the an integrated circuit in a radio frequency data communication device hop a frequency of a continuous wave of an interrogator between various frequencies (column 8 lines 45 to column 9 lines 51) in order to have a successful and reliable communication. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to use a frequency hopping circuitry in a RF device of Wood, Jr. in wireless digital data transmission of a passive transceiver of Girard with the motivation for doing so would have been to provide a reliable communication and reduced amount of time the interrogator continuously uses a single frequency.

Referring to Claim 4, Girard in view of Wood, Jr. disclose the transponder according to claim 1, Wood, Jr. disclose wherein the unit data consists of at least one bit (column 8 lines 17 to 20; column 11 line 30 to 44).

Referring to Claim 5, Girard in view of Wood, Jr. disclose the transponder according to claim 1, Wood, Jr. disclose wherein the unit data consists of at least one symbol (column 8 lines 17 to 20; column 11 line 30 to 44).

Art Unit: 2635

Referring to Claim 6, Girard in view of Wood, Jr. disclose the transponder according to claim 4, Wood, Jr. disclose, wherein the unit data consists of a plurality of bits, and wherein the frequency hopping device hops, according to the frequency hopping pattern representing the plurality of bits, the frequency of the subcarrier wave a plurality of times a total number of which is equal to a total number of the plurality of bits (column 8 lines 17 to 20; column 11 line 30 to 44).

Referring to Claim 7, Girard in view of Wood, Jr. disclose the transponder according to claim 5, Wood, Jr. disclose, wherein the unit data consists of a plurality of symbols, and wherein the frequency hopping device hops, according to the frequency hopping pattern representing the plurality of symbols, the frequency of the subcarrier wave a plurality of times a total number of which is equal to a total number of the plurality of symbols (column 8 lines 17 to 20; column 11 line 30 to 44).

Referring to Claim 8, Girard in view of Wood, Jr. disclose the transponder according to claim 1, Wood, Jr. disclose, wherein the unit data consists of not greater than eight bits (column 8 lines 17 to 20; column 11 line 30 to 44).

*Allowable Subject Matter*

Claims 2-3 and 9-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Referring to claim 2, the following is a statement of reasons for the indication of allowable subject matter: the prior art fail to suggest limitations that a subcarrier wave modulator which modulates the subcarrier wave based on a second portion of the information signal, wherein the carrier wave modulator modulates, based on the subcarrier wave modified by the frequency hopping device and modulated by the subcarrier wave modulator, the carrier wave received by the carrier wave receiving and returning device.

Referring to claims 9-10 and 17-18, the following is a statement of reasons for the indication of allowable subject matter: the prior art fail to suggest limitations that wherein the unit data consists of said at least one bit that can represent an arbitrary one of two different bit values, and wherein the frequency hopping device hops, according to the frequency hopping pattern representing said at least one bit, the frequency of the subcarrier wave to one of two different hopping frequencies that represent the two different bit values, respectively, said one hopping frequency representing one of the two different bit values that is actually represented by said at least one bit.

Referring to claims 19-20, the following is a statement of reasons for the indication of allowable subject matter: the prior art fail to suggest limitations that wherein the unit data consists of said at least one bit that can represent an arbitrary one of two different bit values, and wherein the frequency hopping device hops the frequency of the subcarrier wave according to the frequency hopping pattern comprising a combination of (a) at least one hopping frequency and (b) at least one pair of time slots that represent the two different bit values, respectively.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cho et al. (US# 6,658,044) disclose a frequency hopping communication device and frequency hopping method.

Greef et al. (US# 6,356,230) disclose an interrogators, wireless communication systems, methods of operating an interrogator, methods of monitoring movement of a radiofrequency identification device, method of monitoring movement of a remote communication device and movement monitoring methods.



Art Unit: 2635

Van Zon (US# 5,426,667) discloses a system for the contactless exchange of data, and responder for use in such a system.

Hane (US# 4,804,961) discloses a method and apparatus for measuring distances.

Rabow et al. (US# 4,206,462) disclose a secure communication and ranging system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nam V Nguyen whose telephone number is 571-272-3061. The examiner can normally be reached on Mon-Fri, 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on 571-272-3068. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nam Nguyen  
November 18, 2005



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